

MARKI MANGLI II COAL MINING PROJECT

NOTE ON TRANSPORTATION PLAN

Coals from the face shall be transported by the central haul road of both the sectors and will be directly collected at the receiving hopper of the CHP complex. Coal from the Top Seam shall be transported through the horizontal flank road to quarry floor of same level along strike to reach central haul road laid on the quarry floor and carried to surface along the main haul road. Coal from the central part of the property shall be transported through flank road to surface.

Since coal winning is proposed to be done by Shovel and expected size of coal shall be 1200, which will be down sized to (-)250mm size for which surface crushing arrangement is required may be by Feeder breaker with hopper system.

After crushing, the coal will be loaded on to trucks through hoppers for transportation to nearest Railway siding/ consuming point by State's Road net work. If Surface Miner option is adapted, no crushing arrangement is required as coal produced will (-) 100 mm size. However, no stacking of coal is suggested for spontaneous heating of coal.

Coal stacking and handling arrangements : Coal shall be directly fed into the one no hopper/bunker of 300 TPH capacities. As the peak rated production is kept at 0.3 Million tonnes per year, expected coal production per day is about 900 tonnes per day. Two days of coal production i.e 1800 te shall be kept on ground stock for emergency transportation directly by road.

Trucks carrying coal would be covered with a Tarpaulin to minimize spillage , generating dust and getting airborne. It would also be ensured that roads within mining premises are sprinkled with water .

Date: - 07.12.23

Place: - Bhubneshwar



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7.1.1 DEWATERING OF PITS & ITS MANAGEMENT

7.1.1 Introduction

The Marki Mangli II Coal Mine is a greenfield project and Coal Mining upto a depth of 125 m is proposed as per the approved Mine Plan. This will entail intersection of groundwater table and dewatering is essential for the progress of the mining operations, till the end of mine life which has been anticipated as 39 Years. The details of the proposed dewatering are enumerated below.

7.1.2 Objectives of Dewatering Plan

Any Dewatering Plan needs to take into consideration following aspects:

- i. It should be suitable in terms of human health and safety.
- ii. It should not create unacceptable environmental impacts and should comply with the relevant environmental norms.
- iii. It should be cost effective.
- iv. It should be implemented within required timeframe.
- v. It should not interfere with other mining & allied activities.

Considering the above aspects and the quality of the Mine Pit Water, a simple Mine Pit Dewatering Plan involving utilization of "In-Pit Pumping Methodology" has been envisaged for dewatering of pits of Marki Mangli II Coal Mine.

The "In-Pit Pumping Methodology" is widely used for control of groundwater and surface water in large surface mines and essentially consists of diversion of all the water inflows towards the deepest point of the mine and pumping of the accumulated water there from on surface. Since the water is expected to contain significant amount of suspended solids, it is typically allowed to settle into "Sedimentation / Settling Tanks" before its final discharge into any surface water body after necessary treatment.

7.1.3 Water Management Plan

In the context of Mine Dewatering the key element of the Water Management Plan is the final discharge / disposal of the pumped out water. The available alternatives for Water Management Plan are as under:

- a. Utilization for meeting the Project Water Requirement.
- b. Storage into Surface Water Reservoirs / Ponds.
- c. Re-injection into ground.
- d. Discharge into Surface Water Body.

Utilization of the Mine Pit Water for meeting the domestic as well industrial requirement of the Project is the most preferable alternative.

Re-injection of the pumped Mine Pit Water into the ground is one of the methods for Artificial Recharge of the groundwater. It involves injecting the water into the ground in controlled manner through Recharge Structures like Wells, Canals, Weirs etc. In this process the water is pumped from the Mine Pit and piped to the Recharge Structure located a considerable distance away where the water is again injected back into the ground.

However, such type of Water Re-injection Systems or Artificial Recharge Systems is not straightforward in planning or operation. Therefore, this alternative shall also not be preferable.

The envisaged Dewatering Plan, therefore, considers the most practical solution of discharge of the Mine Pit Water into the nearest Surface Water Body viz. Upasha Nala. This Nala has adequate hydraulic capacity to receive the anticipated quantity of Mine Pit Water without causing downstream flooding.

7.1.4 Envisaged Dewatering Plan

It is proposed to install adequate capacity of pumps at appropriate locations for pumping of the accumulated water in the pits. These pumps shall be capable of handling slurry / high load of suspended solids. The Booster Pumps shall be installed at appropriate locations to pump the Mine Pit Water right up to the Surface Settling Tank.

The pumping requirement has been calculated on the basis of the following general considerations:-

- ⇒ The geographical location of the Project.
- ⇒ Meteorological data from the area / nearest rain-gauge station concerning rainfalls.
- ⇒ Life of the mine and percentage probability of maximum rainfall in one day during the life of the mine.
- ⇒ General climatic conditions, Surface features of the terrain beyond the boundary of the mine / opencast working.
- ⇒ Catchments area: Mined out areas and areas beyond excavation, and dumped / spoil dump area.
- ⇒ Run-off characteristics of the area.
- ⇒ Depth of the quarries at different stages.
- ⇒ Inflow to the quarry of rain water & seepage from nearby nallah/ river.
- ⇒ Desired location at the surface where the quarry water can be discharged, considering the Surface drainage system.
- ⇒ Maximum number of days to pump out the accumulated water in the quarry during peak rainfall in monsoon and the number of pumping operation hours per day-5 days @ 20 hours per day
- ⇒ Geological characteristics of OB and coal seams.
- ⇒ Desired location at surface where quarry water can be discharged considering the surface drainage system.
- ⇒ Effective working hours – 20 hours/day for pumping calculation, but in monsoon period pumping may be done round the clock.

Surface Settling / Sedimentation Tank(s) with adequate capacity shall be constructed to facilitate settling of the suspended solids in order to bring the same to the acceptable limits. The excess quantity of clear water shall be pumped through Discharge Pumps into the seasonal nalas after necessary treatment.

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[1. Coal will be transported to SH 234 which is 1.3 km away. 2. For coal transportation 50 tonne dumper 36 times per day and 30 tonne dumper 300 in number is proposed 3. 1.3 km SH would be strengthened with concrete and 1300 trees of native species would be planted on both side to the road and water spraying to contend the dust would be deployed.


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